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DETECTION OF MYOCARDIAL INFARCTIONS EARLY AND LATE AFTER HEART TRANSPLANTATION WITH CONTRAST-ENHANCED MRI

ACC Poster Contributions
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Background: In heart transplant (HTX) patients (pts.), contrast-enhanced MRI (CE-MRI) allows identification of infarct-typical/-atypical CE-MRI patterns which have prognostic implications. It was shown that pts. with mild transplant coronary artery disease (TCAD) on X-ray already suffered from myocardial infarction (MI) or fibrosis whereas scarce data exists about the time course of these events. We sought to investigate CE-MRI patterns in pts. early and late after HTX

Methods: Group 1 (32 pts.;mean=1,4ys (range=0.4-3.0ys.) after HTX) and group 2 (31 pts.; mean=8.8ys (range=3,4-16,8ys) after HTX) were scanned on a 1.5T MRI scanner (ACHIEVA,Philips,NL) with MRI contrast agent (Gadolinium:0.2mmol/kg/bw) employing an inversion-recovery multislice T1-weighted TFE sequence. Infarct-typical CE-MRI areas were classified as sub-endocardial lesions. Infarct-atypical forms were divided into diffuse, spotted, intramural and infero-septal CE-MRI patterns and analysed with the 17-segment model. Groups were compared using ANOVA (p-values $\leq$0.05=significant).

Results: Infarct-typical CE-MRI was already seen in 8/32 pts (25%) of group 1 (11/544 segments) and in 14/31 pts. (45%) of group 2 (26/527 segments;p<0.01). Conversely, atypical CE-MRI was extensively seen in 26/32 pts (81%) of group 1 (165/544 segments) but only in 16/31 pts. (52%) of group 2 (40/527 segments;p<0.01). Atypical CE-MRI forms of group 1 and 2 were statistically distributed equally (p=n.s.).

Conclusions: Even early after HTX already 25% of pts. suffered from MI whereas later after HTX almost half showed MI. Early after HTX, atypical CE-MRI is more prevalent in group1, potentially due to disturbed vascular integrity or infections/rejections. Once the early phase is overcome, long-term complications like MI will be more prevalent due to TCAD.